SECTION 4

Quality of care in the Medicare program

Chart 4-1. In-hospital and 30-day postdischarge mortality rates improved from 2008 to 2011

Condition or procedure	Risk-adjusted rate per 100 eligible discharges, 2008	Risk-adjusted rate per 100 eligible discharges, 2011	Directional change in rate, 2008–2011
In-hospital mortality			
Acute myocardial infarction	8.64	6.80	Better
Congestive heart failure	4.10	3.22	Better
Stroke	11.02	9.15	Better
Hip fracture	3.02	2.84	No difference
Pneumonia	4.40	3.54	Better
30-day postdischarge mortality			
Acute myocardial infarction	12.88	12.54	No difference
Congestive heart failure	10.55	9.72	Better
Stroke	23.51	23.61	No difference
Hip fracture	8.08	8.52	No difference
Pneumonia	10.04	9.02	Better

Note: Rates are calculated based on the discharges eligible to be counted in each measure. Rates do not include deaths in non–inpatient prospective payment system hospitals or Medicare Advantage plans. "Better" indicates that the risk-adjusted rate decreased by a statistically significant amount from 2008 to 2011 using a $p \leq 0.01$ criterion. "No difference" indicates that the change in the rate was not statistically significant from 2008 to 2011 using a $p \leq 0.01$ criterion.

Source: MedPAC analysis of CMS Medicare Provider Analysis and Review data using Agency for Healthcare Research and Quality Inpatient Quality Indicators version 4.1b (with modifications for 30-day mortality rate calculations).

- Our most recent analysis of several inpatient quality indicators shows generally positive trends. We analyzed five of the Inpatient Quality Indicators developed by the Agency for Healthcare Research and Quality (AHRQ) to measure in-hospital and 30-day postdischarge mortality rates. Trends in risk-adjusted in-hospital mortality rates are used to assess changes in the quality of care provided to Medicare beneficiaries during inpatient stays for certain medical conditions. Thirty-day postdischarge mortality rates reflect the quality of care transitions and posthospital care for beneficiaries in the critical period during and shortly after discharge from an inpatient stay.

- In-hospital and 30-day postdischarge mortality rates declined or remained at a similar level for acute myocardial infarction, congestive heart failure, stroke, and pneumonia as measured by the AHRQ methods.

Chart 4-2. Most hospital inpatient patient safety indicators improved or were stable from 2008 to 2011

Patient safety indicator	Risk-adjusted rate per 100 eligible discharges, 2008	Risk-adjusted rate per 100 eligible discharges, 2011	Directional change in rate, 2008–2011
Death among surgical inpatients with treatable serious complications	9.61	11.61	Worse
Iatrogenic pneumothorax	0.08	0.03	Better
Postoperative respiratory failure	1.84	0.88	Better
Postoperative PE or DVT	1.04	0.43	Better
Postoperative wound dehiscence	0.28	0.20	Better
Accidental puncture or laceration	0.28	0.15	Better

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). "Better" indicates that the risk-adjusted rate decreased by a statistically significant amount from 2008 to 2011 using a $p \leq 0.01$ criterion.

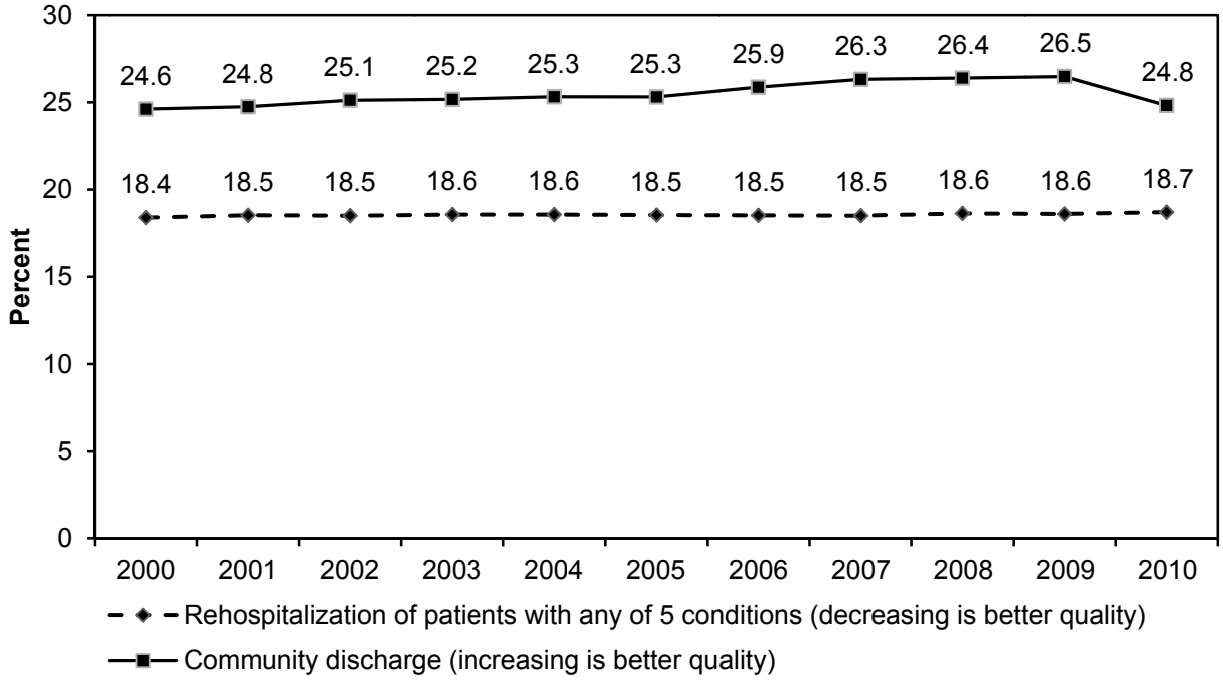
Source: MedPAC analysis of CMS Medicare Provider Analysis and Review data using Agency for Healthcare Research and Quality Patient Safety Indicators version 4.1b.

- We analyzed six of the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSIs), which measure the frequency of potentially preventable adverse events that can occur during an inpatient stay, such as the development of postoperative PE or DVT (development of a blood clot that can suddenly obstruct an artery or vein) or a patient's death from treatable surgical complications. The rates are calculated using software from AHRQ and Medicare inpatient hospital discharge data.

- Rates improved from 2008 to 2011 for five of the six PSIs we analyzed, including iatrogenic pneumothorax (introduction of air into the pleural cavity during a medical procedure, which often causes the lung to collapse), postoperative respiratory failure, postoperative PE or DVT, postoperative wound dehiscence (parting of the sutures of a surgical wound), and accidental puncture or laceration. The PSI that did not improve from 2008 to 2011 was the rate of deaths among surgical inpatients with treatable serious complications.

- Caution should be used in interpreting all the reported PSI rates. PSIs measure rates of very rare events, and it is difficult, even when measuring across all inpatient prospective payment system hospitals, to detect statistically significant changes. The reliability of some of the PSIs also can be affected by variations in providers' coding practices. The Commission monitors trends in the selected PSIs as indicators—not definitive evidence—of changes in rates of treatment-related harm to patients that can be avoided with adherence to known clinical safety practices.

Chart 4-3. Risk-adjusted SNF quality measures show little improvement over 10 years



Note: SNF (skilled nursing facility). Increases in rates of discharge to the community indicate improved quality. The five conditions include congestive heart failure, respiratory infection, urinary tract infection, sepsis, and electrolyte imbalance. Increases in rehospitalization for the five conditions indicate worsening quality. Rates are calculated for all facilities with 25 or more stays.

Source: Rates calculated by MedPAC based on a risk-adjustment model developed by the Division of Health Care Policy and Research, University of Colorado at Denver and Health Sciences Center.

- The Commission's quality measures for SNF care show almost no change from 2000 through 2010.
- The 2010 risk-adjusted rate at which Medicare-covered SNF patients were rehospitalized for potentially avoidable conditions was 18.7 percent, 0.3 percentage point higher than the rate in 2000. The level of readmissions is slightly higher than was previously reported by the Commission because a more recent base year was used. However, the trends are identical to those previously reported.
- The 2010 risk-adjusted rate of community discharge—a measure of SNFs' ability to return their patients to independent living—was 24.8 percent, up 0.2 percentage point from 2000.

Chart 4-4. Risk-adjusted home health quality measures held steady or improved from 2004 through 2012

Functional measures	2004	2006	2008	2010	2011	2012
Improvements in:						
Transferring	47%	50%	51%	54%	51%	52%
Bathing	56	60	62	65	62	63
Walking	N/A	N/A	N/A	N/A	53	55
Medication management	N/A	N/A	N/A	N/A	43	45
Pain management	N/A	N/A	N/A	N/A	65	65

Note: N/A (not applicable). The measures for walking, medication management, and pain management changed in 2011, and therefore the 2011 results shown are not comparable to data from prior years.

Source: MedPAC analysis of Outcome and Assessment Information Set, home health standard analytic file, and CMS Home Health Compare data.

- Medicare publishes risk-adjusted home health quality measures that track changes in the functional abilities for patients who receive home health care. These measures are reported for all home health episodes that do not terminate with a hospitalization.

- Since 2004, the rates of functional improvement have generally held steady or slightly improved each year. For example, the rate of home health patients demonstrating improvement in their ability to bathe has increased from 56 percent to 63 percent.

Chart 4-5. Dialysis quality of care: Some measures show progress, others need improvement, 2004–2011

Outcome measure	2004	2008	2010	2011
Percent of in-center hemodialysis patients:				
Receiving adequate dialysis	95%	95%	95%	97%
Anemia measures				
Mean hemoglobin 10–12 g/dL	42	57	68	74
Mean hemoglobin ≥ 12 g/dL*	52	37	25	12
Mean hemoglobin < 10 g/dL	6	6	7	14
Dialyzed with an AV fistula	39	50	56	59
Percent of peritoneal dialysis patients:				
Receiving adequate dialysis	90	88	89	91
Anemia measures				
Mean hemoglobin 10–12 g/dL	41	52	58	61
Mean hemoglobin ≥ 12 g/dL*	54	39	31	21
Mean hemoglobin < 10 g/dL	5	9	11	18
Percent of prevalent dialysis patients wait-listed for a kidney	16	17	17	N/A
Renal transplant rate per 100 dialysis patient years	4.8	4.2	3.9	N/A
Annual mortality rate per 100 patient years*	20.9	18.5	17.3	N/A
Total admissions per patient year*	2.0	1.9	1.9	N/A
Hospital days per patient year	13.9	13.0	12.1	N/A

Note: g/dL (grams per deciliter of blood), AV (arteriovenous), N/A (not available). Data on dialysis adequacy, use of fistulas, and anemia management represent percent of patients meeting CMS's clinical performance measures. United States Renal Data System adjusts data by age, gender, race, and primary diagnosis of end-stage renal disease.
*Lower values suggest higher quality.

Source: Compiled by MedPAC from the Elab Project Report, Fistula First, and the United States Renal Data System.

- The quality of dialysis care has improved for some measures. All hemodialysis patients require vascular access—the site on the patient's body where blood is removed and returned during dialysis. Between 2004 and 2011, use of arteriovenous fistulas, considered the best type of vascular access, increased from 39 percent to 59 percent of hemodialysis patients. Between 2004 and 2010, overall adjusted mortality rates decreased but remained high among dialysis patients.

- The quality of dialysis care has remained steady for some measures. Between 2004 and 2011, the proportion of hemodialysis patients receiving adequate dialysis remained high. Overall rates of hospitalization remained steady at about two admissions per dialysis patient per year.

- Other measures suggest that improvements in dialysis quality are still needed. We looked at access to kidney transplantation because it is widely believed to be the best treatment option for individuals with end-stage renal disease. The proportion of dialysis patients accepted on the kidney transplant waiting list remains low.

Chart 4-6. Medicare Advantage quality measures show improvement between 2011 and 2012 for local PPOs

	HMO average rate		Local PPO average rate	
Measures	2011	2012	2011	2012
HEDIS® administrative measures				
Breast cancer screening	68.5	68.9	66.1	65.9[a]
Glaucoma testing	63.8	65.8[b]	65.5	66.8
Osteoporosis management	20.7	22.5	18.7	19.3[a]
Rheumatoid arthritis management	72.8	72.6	78.3	77.7[a]
HEDIS® hybrid measures				
BMI documented	50.3	68.1[b]	36.7	63.2[ab]
Colorectal cancer screening	57.6	60.0[b]	41.3	55.5[ab]
Cholesterol screening for patients with heart disease	88.5	88.9	87.1	88.4[b]
Controlling blood pressure	61.9	64.0[b]	55.8	61.3[ab]
Cholesterol screening for patients with diabetes	87.9	88.3	86.3	86.7[a]
Eye exam to check for damage from diabetes	64.6	66.0	62.7	64.3
Kidney function testing for members with diabetes	89.2	89.8[b]	87.3	88.1[ab]
Diabetics with cholesterol under control	52.2	52.5	45.9	51.1[b]
Diabetics not controlling blood sugar (lower rate better)	25.9	26.5	34.3	28.4[b]
Measures from HOS[c]				
Advising physical activity	47.9	48.6	47.6	47.7
Improving bladder control	36.0	34.9[b]	36.6	35.8
Reducing the risk of falling	60.5	60.5	55.1	54.3[a]
Other measures based on HOS				
Improving or maintaining physical health	66.4	65.5[b]	66.1	65.6
Improving or maintaining mental health	77.5	76.5[b]	78.5	77.8
Measures from CAHPS®				
Annual flu vaccine	67.9	68.0	68.6	68.8
Ease of getting needed care and seeing specialists	84.7	84.4	85.9	85.9
Getting appointments and care quickly	75.1	75.5	76.7	76.5
Overall rating of health care quality	85.5	85.8	86.1	86.5[b]
Overall rating of plan	85.7	86.2	84.2	85.1[b]

Note: PPO (preferred provider organization), HMO (health maintenance organization), HEDIS® (Healthcare Effectiveness Data and Information Set®, a registered trademark of the National Committee for Quality Assurance), HOS (Health Outcomes Survey), BMI (body mass index), CAHPS® (Consumer Assessment of Healthcare Providers and Systems®, a registered trademark of the Agency for Healthcare Research and Quality). Rate is percent of applicable enrollees receiving the indicated test or treatment. Medicare Advantage plan types not included in the data are regional PPOs, private fee-for-service plans, continuing care retirement community plans, and employer-directed plans. Cost-reimbursed HMO plan results are included. HEDIS® administrative measures are calculated using administrative data, such as claims, encounter data, pharmacy data, and certain electronic records; hybrid measures involve sampling medical records to determine a rate. Averages are for all reporting plans in each year; therefore, results may differ from those shown in other MedPAC reporting of scores for plans that report measures for both years of a two-year time period.

[a] Statistically significant difference in performance in 2012 between HMO and PPO results ($p < 0.05$).

[b] Statistically significant difference in performance between 2011 and 2012 on this measure for this plan type ($p < 0.05$).

[c] Results shown for HEDIS measures taken from HOS (the three measures listed) include scores for plans not reporting other HEDIS data. Therefore, results may differ from those shown in other MedPAC reporting of these scores.

Source: MedPAC analysis of CMS HEDIS public use files for HEDIS measures and star ratings data for measures based on HOS and for CAHPS measures.

(Chart continued next page)

Chart 4-6. Medicare Advantage quality measures show improvement between 2011 and 2012 for local PPOs (continued)

- The chart displays simple averages across all plans in each category (HMOs and local PPOs) for each year.

- The measures listed are included in the measures that CMS uses to develop Medicare Advantage plan star ratings, which are the basis of quality bonus payments to plans. For star rating purposes, measures have different weights. Process measures, such as each of the HEDIS administrative measures, have a weight of 1. Patient experience measures, including the last four items in Chart 4-6, have a weight of 1.5. Outcome measures have a weight of 3. The following outcome measures in Chart 4-6 are used in the star ratings: controlling blood pressure (for all patients with hypertension), diabetics with their cholesterol under control, and diabetics not controlling their blood sugar.

- Between 2011 and 2012, HMOs had statistically significant improvement for 5 of the 23 measures shown in Chart 4-6, with 3 measures showing a statistically significant decline in the 2-year time period. Of the five improved measures, four are HEDIS hybrid measures, which involve documentation from a review of a sample of medical records. The three measures that declined are collected through a HOS member survey, including measures tracking members' improvement or decline in mental and physical health.

- For local PPOs, nine measures showed statistically significant improvement. Seven of them were HEDIS hybrid measures, which involve documentation from a review of a sample of medical records. PPOs were not allowed to use medical record documentation until 2010. Thus, the observed improvement in local PPOs' performance may reflect their improved ability to report on these types of measures (see discussion in March 2013 Report to the Congress, chapter 13). Local PPOs also improved in two patient experience measures: members' overall rating of health care quality in the plan and overall rating of the plan.

- For five of the nine HEDIS hybrid measures, HMOs continue to perform better than local PPOs. Differences between HMOs and local PPOs for the other four HEDIS hybrid measures are not statistically significant. HMOs also perform better than local PPOs on three other measures (breast cancer screening; osteoporosis management in women who have had a fracture; and reducing the risk of falling among members with a problem falling, walking, or maintaining balance). Local PPOs performed better on a measure of rheumatoid arthritis management (members receiving an ambulatory prescription for a disease-modifying anti-rheumatic drug).

- As of 2011, HEDIS includes a measure of hospital readmissions (all-cause readmissions within 30 days of a hospital admission). As a new measure in the star rating system in 2011, it had a weight of 1.0, and CMS increased the weight to 3.0 in the 2012 star ratings. For this measure, HMOs and local PPOs had readmission rates below expected rates, and there was little difference in results between 2011 and 2012 for either HMOs or local PPOs. (For details, see Table 13-8 of the March 2013 Report to the Congress.)

Web links. Quality of care in the Medicare program

- Chapters 3, 4, 6, and 8 through 11 of the Commission's March 2013 Report to the Congress include information on the quality of care provided under fee-for-service Medicare by inpatient hospitals, physicians and other ambulatory care providers, outpatient dialysis facilities, skilled nursing facilities, home health agencies, inpatient rehabilitation facilities, and long-term care hospitals.

  http://medpac.gov/chapters/Mar13_Ch03.pdf
  http://medpac.gov/chapters/Mar13_Ch04.pdf
  http://medpac.gov/chapters/Mar13_Ch06.pdf
  http://medpac.gov/chapters/Mar13_Ch08.pdf
  http://medpac.gov/chapters/Mar13_Ch09.pdf
  http://medpac.gov/chapters/Mar13_Ch10.pdf
  http://medpac.gov/chapters/Mar13_Ch11.pdf

- Chapter 13 of the Commission's March 2013 Report to the Congress includes information on the quality of care in Medicare Advantage plans.

  http://medpac.gov/chapters/Mar13_Ch13.pdf

- Chapter 15 of the Commission's March 2013 Report to the Congress includes information on quality and other performance measures for Medicare Part D plans (stand-alone Prescription Drug Plans and Medicare Advantage–Prescription Drug plans).

  http://medpac.gov/chapters/Mar13_Ch15.pdf

- Chapter 6 of the Commission's March 2010 Report to the Congress includes a set of recommendations on comparing the quality of care between Medicare fee-for-service and Medicare Advantage and among Medicare Advantage plans.

  http://medpac.gov/chapters/Mar10_Ch06.pdf

- Chapter 2D of the Commission's March 2008 Report to the Congress includes a recommendation on improving quality measurement for skilled nursing facilities.

  http://medpac.gov/chapters/Mar08_Ch02d.pdf

- Chapter 4 of the Commission's June 2007 Report to the Congress discusses policy options to improve the quality of home health services, and Chapter 8 of the same report discusses improvements in measuring the quality of care provided by skilled nursing facilities.

  http://medpac.gov/chapters/Jun07_Ch04.pdf
  http://medpac.gov/chapters/Jun07_Ch08.pdf

- The CMS website provides general information on several of the Medicare program's quality and value-based purchasing initiatives, with links to more detailed information.

  http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/index.html

- Medicare provides public comparative information on selected quality measures for hospital, nursing home, home health agency, and dialysis facilities on its consumer-oriented "Medicare.gov" website.

  Hospital Compare: http://www.medicare.gov/hospitalcompare/
  Nursing Home Compare: http://www.medicare.gov/NHCompare/Home.asp
  Home Health Compare: http://www.medicare.gov/homehealthcompare/
  Dialysis Facility Compare: http://www.medicare.gov/dialysisfacilitycompare/

- CMS makes available downloadable databases of the quality measures and other information underlying the four provider comparison databases cited above.

  http://www.medicare.gov/download/downloaddb.asp

- A list of the physicians and other health care professionals who participated in Medicare's Physician Quality Reporting System and reported quality measure information satisfactorily for the year 2010 is available on the Medicare.gov website.

  http://www.medicare.gov/find-a-doctor/staticpages/data/pqrs/physician-quality-reporting-system.aspx

- Results for Medicare Advantage plan quality measures are available through a Medicare Plan Finder tool on the Medicare consumer website. The tool allows users to make plan-to-plan comparisons within a specified geographic area as well as comparisons with Medicare fee-for-service results on certain measures.

  https://www.medicare.gov/find-a-plan/questions/home.aspx

- CMS makes available a downloadable database of the results for Medicare Advantage plan quality measures underlying the Medicare Plan Finder and star ratings.

  http://www.medicare.gov/download/downloaddb.asp (select "Plan Ratings Data" from the drop-down menu)

- Current and past editions of the National Committee for Quality Assurance (NCQA) publication *The State of Health Care Quality Report*, which presents trends in quality measures for health plans with Medicare, Medicaid, and commercial membership, are available from the NCQA website.

  http://www.ncqa.org/ReportCards/HealthPlans/StateofHealthCareQuality.aspx